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NCDC's SATELLITE DATA, PRODUCTS, and SERVICES

Satellite data and derived products from NOAA's satellite systems are available through the National Climatic Data Center. The two primary systems are the Geostationary Operational Environmental Satellite (**GOES**), which started in 1975, and the Polar Orbiting Environmental Satellite (**POES**), which began as the TIROS series in 1960. The NCDC also archives SSM/I, SSM/T1 and SSM/T2 data from the Defense Meteorological Satellite Program (**DMSP**) satellites. For a complete listing of satellite data, products and services, please visit the new Satellite Data, Products, and Services Web site at: http://www.ncdc.noaa.gov/psguide/satellite/sathome.html.

About NOAA's Satellites

NOAA's newest series of GOES satellites are three-axis body stabilized and equipped with a separate Imager and Sounder, replacing the old VAS (VISSR Atmospheric Sounder) instrument. Currently, there are two operational GOES satellites, GOES-8 and GOES-9, launched April 1994 and May 1995, respectively. Both are in Earth-synchronous orbits with GOES-8 positioned over the equator at 75 W longitude and GOES-9 positioned over the equator at 135 West longitude. The Imager instrument consists of five channels ranging from the visible to the longwave infrared channel. The visible channel has a resolution of 1km while most of the infrared channels have a resolution of 4km at nadir. The Sounder, carrying 18 thermal infrared channels, is capable of making over 50,000 soundings per hour, which is particularly useful over data sparse regions of the Western Hemisphere. Each of the GOES satellites scans predetermined areas of the earth from the mid Pacific region to the eastern Atlantic region. During routine mode, observations are taken over the United States four times every hour, but when severe weather threatens, the GOES Imager is capable of one minute interval observations over a smaller area. A variety of products from the Sounder and Imager are created operationally to improve near real-time and long range forecasts.

The POES satellite system offers the advantage of daily global coverage, by making nearly polar orbits roughly 14.1 times daily. Since the number of orbits per day is not an integer, the sub-orbital tracks do not repeat on a daily basis, although the local solar time of each satellite's passage is essentially unchanged for any latitude. Currently in orbit are NOAA-12 and NOAA-14; thus, there is global coverage four times daily. The satellite

system includes the AVHRR (Advanced Very High Resolution Radiometer) and the TOVS (Tiros Operational Vertical Sounder). The AVHRR is equipped with five spectral channels in wavelengths similar to the GOES Imager. The TOVS carries three types of sensors: Microwave Sounding Unit (MSU), Stratospheric Sounding Unit (SSU), and High Resolution Infrared Radiation Sounder/2 (HIRS/2). Operational products such as the Global Vegetation Index, Sea Surface Temperatures, Total Stratospheric Ozone, and TOVS Soundings are created and archived at NCDC.

Satellite Active Archive (SAA)

NOAA's Satellite Active Archive (SAA) is a revolutionary system designed to provide easy access to satellite data. It is a gateway to NOAA's digital library of real-time and historical satellite data collected by NOAA's Polar Orbiting Environmental Satellites (POES). The system allows users to search inventories of satellite data, preview representative Earth images of that data, and to download the data for further processing and analyses.

Users can access AVHRR data from March 1, 1994 to the present and TOVS data from July 1, 1995 to the present using a Web Browser. Other satellite datasets such as the DMSP SSM/I, SSM/T1, SSM/T2, TDR, SDR, EDR Level 1b data will be added in the near future. The WWW address is: http://www.saa.noaa.gov.

Once the data requirements have been determined, an order may be placed electronically for ftp or copy to tape format. Up to thirty-two datasets with no more than 10 MB of data each can be ftp'ed to your site per session at no cost!! For datasets larger than 10 MB, the order system will automatically set the order to tape output for a fee of $50.00 for the first dataset and $30.00 for subsequent datasets. The user must contact the NCDC to establish an open account for SAA, prior to placing tape orders. For one-time orders, contact the Satellite Services Group and provide the SAA entity IDs along with a means of payment.

Digital Satellite Data and Products *

Polar Operational Environmental Satellite (**POES**):

LEVEL 1b DATASETS:

AVHRR GAC, LAC, and HRPT	10/78 - Present
TOVS MSU, SSU, HIRS/2	10/78 - Present

PRODUCTS:

TOVS Sounding Product	01/01/79 - Present
Vegetation Index from AVHRR (3rd Generation)	04/01/85 - Present
Plate Carree Projection only!! 16km gridded	
Weekly Composite (B-level)	
Monthly Product (C-level)	
Climatology (D-level)	
Heat Budget Data	
Monthly Mean	01/01/79 - Present
Seasonal	06/01/74 - Present
Mapped GAC Imagery	
Polar Stereographic	12/22/78 - Present
Mercator	06/24/85 - Present
Sea Surface Temperature Data	
7 - 8 Day Observation File from AVHRR	12/01/78 - Present
250 km Monthly Mean Data from AVHRR	01/31/79 - Present
100 km Analysis (Global Scale) from AVHRR	12/01/72 - Present
50 km (Regional Scale) and 500km	03/01/74 - Present
14 km Analysis (Local-Scale) from AVHRR	01/01/86 - Present

Geostationary Operational Environmental Satellite (GOES):

GVAS & GVAR DATA:

Full Disk and Sectors	03/01/75 - Present

PRODUCTS:

Sounding Products	02/01/95 - Present
Cloud and Moisture Drift Winds	02/01/95 - Present

Defense Meteorological Satellite Program (**DMSP**):

LEVEL 1b DATASETS:

Special Sensor Microwave/Temperature(SSM/T)	08/18/87 - Present
Special Sensor Microwave/Imager (SSM/I)	08/18/87 - 06/06/96

PRODUCTS:

Temperature, Sensor, and Environmental Data Records (TDR,SDR,EDR)	07/16/87 - Present
SSM/T Sounding Product	01/01/89 - Present
SSM/I Monthly Gridded Products	01/01/87 - 12/31/94
Precipitation	
Snow Cover/Sea ice	
Total Precipitable Water	
Cloud Liquid Water	

Oceanic Surface Wind Speed	
RTNEPH Layered Cloud Amount, Type, Base, Height (Global analysis on 40km grid, every 3 hours)	01/01/84 - Present

International Satellite Cloud Climatology Project (ISCCP):

B1 Radiance Data (10km) from GOES VISSR/VAS	07/01/83 - Present
B1 Radiance Data (10km) from GMS	07/01/83 - Present
B1 Radiance Data (10km) from METEOSAT	07/01/83 - Present
B2 Radiance Data (30km) from NOAA Polar Orbiters	07/01/83 - Present
B3 Radiance Data (30km, 3hr)from NOAA Polar Orbiters	07/01/83 - Present
B3 Radiance Data (30km, 3hr) from GOES	07/01/83 - Present
B3 Radiance Data (30km, 3hr) from METEOSAT	07/01/83 - Present
B3 Radiance Calibration Tables (3hr for each satellite)	07/01/83 - Present
C1 Global Cloud Data (3hr, 280km grid, all satellites merged)	07/01/83 - 06/30/91
C2 Global Cloud Data (monthly, 280km grid, all satellites merged)	07/01/83 - 06/30/91
D1 Global Cloud Data (3hr, 280km grid)	01/01/86 - 12/31/92
replaces C1 Data-will be processed back to 1983, gap in yrs 1987-89	
D2 Global Cloud Data (monthly, 280km grid)	01/01/86 - 12/31/92
replaces C2 Data-will be processed back to 1983, gap in yrs 1987-89	

Aerosols:

Optical Thickness (OT) Observations	06/87 - Present
OT Weekly Analyzed Fields	06/87 - Present
OT Monthly Analyzed Fields	06/87 - Present

Non-digital Satellite Products *

AVHRR Imagery:

Local Area Coverage (LAC)	04/01/85 - Present
High Resolution Picture Transmission (HRPT)	04/01/85 - Present
Global Area Coverage (GAC) by satellite pass	10/30/78 - Present

GOES Imagery:

Visible and Infrared Hardcopy Imagery	01/01/78 - Present

Sea Surface Temperature Charts:

250km Global Monthly Mean Charts	07/01/81 - Present
50km Regional Charts (selected regions)	04/01/76 - Present
14km Local Charts (mainly U.S. coastal areas)	01/01/86 - Present
Gulf Stream Anal. Charts-North/South Panels	10/19/78 - 09/30/95

Aerosol Charts:

100 km Weekly Contour	10/19/78 - Present

Monthly Mean	10/19/78 - Present

***** Please contact the Satellite Services Group for prices and availability of other satellite data. NCDC has documentation for many of the above mentioned datasets which are provided at no charge. The *ISCCP* documentation and *Polar Orbiter Data User's Guide* are available on the Internet. Go to NCDC's Satellite Data Products and Services Home Page and click on **Listing of Satellite Data and Products**. The 'km' figures listed above (e.g., 10km) refer to the resolution of the instrument, such as 10 kilometer. The 'hr' values (e.g., 3hr) refer to the frequency of the product, such as every 3 hours.

Satellite Data Price and Order Guide

The National Climatic Data Center maintains an extensive archive of digital data, as well as non-digital satellite data, including miscellaneous slides, prints, film, and VHS tapes of special events too numerous to list. Please contact the Satellite Services Group for details. We also recommend contacting us to confirm prices, ordering procedures, and print and digital formats.

Digital Orders:

Media Type--
- Round tapes (1600/6250bpi)
- IBM 3480 cartridges
- 8mm Exabyte tapes
- 4mm DAT tapes
- CD-ROM

Processing Fees--
- $75.00 per dataset or input tape ($80.00 per GOES dataset)
- $11.00 per tape or CD-ROM output
- $11.00 service and handling per domestic order/$21.00 per foreign order

File Transfer Protocol (FTP) Services:

GOES data in McIDAS area format--
- $45.00 per scene (image)

POES-AVHRR and TOVS data in level 1b format--
(Access via Satellite Active Archive)
- Free for subsetted datasets

DMSP SSM/I gridded datasets--
- Free from NCDC's WWW homepage (http://www.ncdc.noaa.gov)

FTP services are possible for many other satellite datasets at costs similar to other output formats.

Hard Copy AVHRR and GOES Images:

Custom* 8" X 10" Prints/Transparencies
- $85.00 per glossy finish

Reproduction Prints/Transparencies
- $25.00 per glossy finish

Extra copies
- $5.00 each

35mm slides
- Add $25.00 to the above fees where appropriate

Please add $5.00 service & handling fee per order.

* Custom images are created for customer defined areas, dates, times, and channels, and generally have special enhancements. These images are processed from the original data files (level 1b from POES and GVAR from GOES) using McIDAS display and processing software. When ordering, please specify satellite, geographic area, feature wanted shown, satellite channel (visible vs. infrared), resolution, map projection, date, and UTC time.

Reproduction images are readily available and can be copied from NCDC's image library. The majority of these images include special events, such as hurricanes, blizzards, volcanic eruptions, forest fires, etc. Hundreds of these images are available as GIF files on NCDC's Web site. The WWW address is: http://www.ncdc.noaa.gov. Click on "On-Line Data Access".

NCDC maintains an archive of miscellaneous slides, prints, film, and VHS tapes of non-special and special events taken by various satellites too numerous to list here. Please contact the Satellite Services Group at the NCDC for details:

Telephone: 704-271-4850
Facsimile: 704-271-4876
E-mail: satorder@ncdc.noaa.gov

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PUBLICATIONS

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Following is a brief summary of publications available from the National Climatic Data Center (NCDC). Unless otherwise noted, the summaries are for U.S. locations only. However, there are a number of worldwide summaries/publications. For publications listed as available from NTIS, the phone number is 703-487-4650. Otherwise, please contact NCDC for information on pricing and availability. Some publications are out of print and available on microfiche/microfilm only (* items).

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